

CLAIMS

1. An adaptive noise reduction method including an adaptive filter for obtaining a signal approximate to a periodic signal to be reduced from a reference input pulse signal synchronous with said periodic signal to be reduced within a main input signal, and composition means for subtracting an output signal of said adaptive filter from said main input signal, in which an output signal of said composition means is fed back to said adaptive filter and said adaptive filter performs adaptation processing so that noise power of the output signal of said composition means may be minimum, wherein

a ring-shaped memory constituting said adaptive filter,

a read-address generator for generating read addresses of the ring-shaped memory and

a write-address generator for generating write addresses thereof are provided, and

relative phase between said read address and said write address is made to be variable.

2. An adaptive noise reduction method according to claim 1, wherein

the relative phase between said read address and said write address varies in accordance with a change in a period of said reference input pulse signal.

3. An adaptive noise reduction method according to claim 1 or 2, wherein

said composition means subtracts the output signal of said adaptive filter from said main input signal through data interpolation means.

4. An adaptive noise reduction method according to claim 1, wherein

the number of taps (the number of words) M of the ring-shaped memory constituting said adaptive filter has a relation of

$$M \geq S \cdot TM$$

where S is a sampling frequency of said periodic signal to be reduced and TM is the maximum period that said reference input pulse signal can take.

5. An adaptive noise reduction apparatus including
an adaptive filter for obtaining a signal approximate to a periodic signal to be reduced from a reference input pulse signal synchronous with said periodic signal to be reduced within a main input signal and

composition means for subtracting an output signal of said adaptive filter from said main input signal, in which

an output signal of said composition means is fed back to said adaptive filter and said adaptive filter performs

adaptation processing so that noise power of the output signal of said composition means may be minimum, comprising:

a ring-shaped memory constituting said adaptive filter,

a read-address generator for generating read addresses of said ring-shaped memory and

a write-address generator for generating write addresses thereof, wherein

relative phase between said read address and said write address is made to be variable.

6. An adaptive noise apparatus according to claim 5, wherein

the relative phase between said read address and said write address varies in accordance with a change in a period of the reference input signal.

7. An adaptive noise reduction apparatus according to claim 5 or 6, wherein

said composition means subtracts the output signal of said adaptive filter from said main input signal through data interpolation means.

8. An adaptive noise reduction apparatus according to claim 5, wherein

the number of taps (the number of words) M of the ring-

shaped memory constituting the adaptive filter has a relation of

$$M \geq S \cdot TM$$

where S is a sampling frequency of said periodic signal to be reduced and TM is the maximum period that said reference input pulse signal can take.